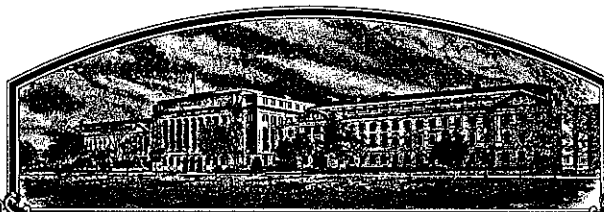


No.



8700056

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Delta and Pine Land Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (AT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'Deltapine 675'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 30th day of June in the year of our Lord one thousand nine hundred and eighty-seven.

Attest:

Kenneth H. Evers
Commissioner

Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S) Delta and Pine Land Company		2. TEMPORARY DESIGNATION Deltapine X2169		3. VARIETY NAME Deltapine 675	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P. O. Box 157 Scott, MS 38772		5. PHONE (Include area code) (601) 742-3351		FOR OFFICIAL USE ONLY PVPO NUMBER 8700056	
6. GENUS AND SPECIES NAME Glycine max		7. FAMILY NAME (Botanical) Leguminosae		FILING DATE February 2, 1987 TIME 8:30 A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME Soybean		9. DATE OF DETERMINATION October, 1981		AMOUNT FOR FILING \$ 1800.00 DATE February 2, 1987	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				FEES RECEIVED AMOUNT FOR CERTIFICATE \$ 200.00 DATE May 27, 1987	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware				12. DATE OF INCORPORATION	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Harry B. Collins Delta and Pine Land Company Scott, MS 38772 PHONE (Include area code):					

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

- a. ☒ Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.)
d. ☒ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) ☐ Yes (If "Yes," answer items 16 and 17 below) ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ Foundation ☐ Registered ☒ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ Yes (If "Yes," give date)☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?

This variety was first sold in the United States on February 14, 1986. It has only been sold in the United States.

☒ Yes (If "Yes," give names of countries and dates)☐ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT

DATE

SIGNATURE OF APPLICANT

DATE

EXHIBIT A

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DELTAPINE 675Origin and Breeding History of the Variety

Deltapine 675 originated from the cross Bedford x DP X479 which was made in 1978. DP X479 was a breeding line developed by Delta and Pine Land Company. DP X479 originated from the cross V68-920 x Mack. V68-920 was a Virginia breeding line. The pedigree method was employed in selecting this variety. In 1981, an F_4 plant row was bulked for yield testing in 1982. Concurrent yield testing and increasing of this line, then known as experimental strain Deltapine X2169, was carried out. Observations and rogueing were conducted in subsequent years on each increase generation. Based on these observations, Deltapine 675 is stable for all observable characteristics with the exception of hilum color. Deltapine 675 has a brown hilum with up to 1.9% of the seed having a black hilum.

EXHIBIT B

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DELTAPINE 675Novelty Statement

Deltapine 675 is most similar to Asgrow 5474. The principle differences between Deltapine 675 and Asgrow 5474 are hilum color, date of maturity and protein content (%). Deltapine 675 has a brown hilum and Asgrow 5474 has a black hilum. In replicated field tests conducted by Delta and Pine Land Company over three years the average maturity date of Deltapine 675 was 8 days later than the average maturity date of Asgrow 5474. Deltapine 675 has exhibited a lower protein content (39.1%) than Asgrow 5474 (41.7%).

8700056

TABLE B I
AVERAGE DATA FOR 25 TESTS CONDUCTED IN MISSISSIPPI,
LOUISIANA, ARKANSAS AND TENNESSEE IN 1984, 1985, and 1986

	<u>Deltapine 675</u>	<u>Asgrow 5474</u>	<u>Differences</u>
Flower Color <u>1/</u>	W	W	none
Pubescence Color <u>2/</u>	T	T	none
Plant Height (cm)	89.9	78.9	+11.0
Maturity Date	10-06	09-28	+8
Lodging <u>3/</u>	1.4	1.3	+0.1
Protein Content (%)	39.1	41.7	-2.6
Oil Content (%)	23.2	22.4	+0.8
Weight gm/100 Seed	14.8	16.2	-1.4
Seed Quality Rating <u>4/</u>	1.3	1.0	+0.3
Seed Coat Luster <u>5/</u>	2.0	2.0	none
Seed Coat Color <u>6/</u>	3.7	1.0	+2.7
Hilum Color	Brown	Black	different

1/ P = Purple
W = White

2/ T = Tawny
G = Gray

3/ 1 = No Lodging
5 = Severe Lodging

4/ 1 = Very Good Quality
5 = Very Poor Quality

5/ 1 = Very Shiny
5 = Very Dull

6/ 1 = Deep Yellow
5 = Light Yellow

4

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Delta and Pine Land Company	TEMPORARY DESIGNATION Deltapine X2169	VARIETY NAME Deltapine 675
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P. O. Box 157 Scott, MS 38772		FOR OFFICIAL USE ONLY PVPO NUMBER 8700056

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = ≤ 1.2)
3 = Elongate (L/T ratio > 1.2 ; T/W = ≤ 1.2)

2 = Spherical Flattened (L/W ratio > 1.2 ; L/T ratio = ≤ 1.2)
4 = Elongate Flattened (L/T ratio > 1.2 ; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other (Specify) _____

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow 2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low 2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a) 2 = Type B (SP1^b)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other (Specify) _____

11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 31 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

★ 13. FLOWER COLOR:

☐ 1

1 = White

2 = Purple

3 = White with purple throat

★ 14. POD COLOR:

☐ 1

1 = Tan

2 = Brown

3 = Black

★ 15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☐ 31 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Gován')

2 = Intermediate ('Amcor'; 'Braxton')

★ 17. PLANT HABIT:

☐ 2

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

☐ 081 = 000
9 = VI2 = 00
10 = VII3 = 0
11 = VIII4 = I
12 = IX5 = II
13 = X

6 = III

7 = IV

8 = V

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 0Bacterial Blight (*Pseudomonas glycinea*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★

☐ 0Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)

★

☐ 0

Race 1

☐ 0

Race 2

☐ 0

Race 3

☐ 0

Race 4

☐ 0

Race 5

☐ 0

Other (Specify)

☐ 0Target Spot (*Corynespora cassicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microspheera diffusa*)

★

☐ 0Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

- ★ ☐ 2 Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)
- ☐ 2 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 2 Race 1 ☐ 2 Race 2 ☐ 0 Race 3 ☐ 0 Race 4 ☐ 0 Race 5 ☐ 0 Race 6 ☐ 0 Race 7
- ☐ 0 Race 8 ☐ 0 Race 9 ☐ 0 Other (Specify) _____

VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 2 Race 3 ☐ 2 Race 4 ☐ 0 Other (Specify) _____
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☐ 1 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 1 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ 2 OTHER DISEASE NOT ON FORM (Specify): Javanese Root Knot Nematode (*Meloidogyne javanica*)

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 0 Iron Chlorosis on Calcareous Soil
- ☐ 0 Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ 0 Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Asgrow 5474	Seed Coat Luster	Asgrow 5474
Leaf Shape	Asgrow 5474	Seed Size	Pioneer 5482
Leaf Color	Asgrow 5474	Seed Shape	Bedford
Leaf Size	Asgrow 5474	Seedling Pigmentation	-----

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Deltapine 675 Submitted	10-06	1.4	89.9	--	--	39.1	23.2	14.8	3
Asgrow 5474 Name of Similar Variety	9-28	1.3	78.9	--	--	41.7	22.4	16.2	3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBT1-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

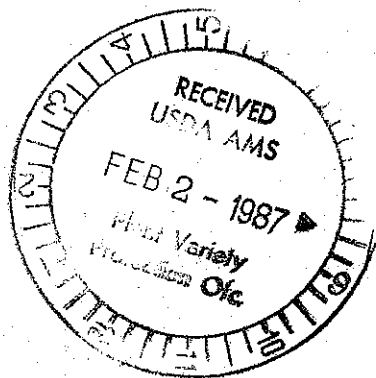


EXHIBIT D

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DELTAPINE 675Additional Description of the Variety

Deltapine 675 is a group V maturity soybean which matures an average of eight days later than Asgrow 5474, four days later than Forrest and three days later than Bedford. Deltapine 675 has white flowers, a tawny pubescence and a tan pod wall. The foliage of Deltapine 675 is dark green. The seed coat color is medium light yellow and the seed coat luster is shiny. The hilum color is brown. The seed of Deltapine 675 (3068 seed per pound) is smaller in size than the seed of Asgrow 5474 (2803 seed per pound) and larger than that of Forrest (3492 seed per pound) and Bedford (3603 seed per pound).

Deltapine 675 is lower in protein content (39.1%) than Asgrow 5474 (41.7%) and similar to Bedford (39.7%) and Forrest (39.8%).

Deltapine 675 is resistant to races 3 and 4 of cyst nematode (Heterodera glycines). It is moderately resistant to the Javanese root knot nematode (Meloidogyne javanica). Deltapine 675 exhibits hypocotyl resistance to races 1 and 2 of Phytophthora megasperma which causes phytophthora root rot.

Deltapine 675 is slightly taller (89.9 cm) than Asgrow 5474 (78.9 cm).

As stated above Deltapine 675 has white flowers. Deltapine 675 has up to one (1) plant with purple flowers in 2000 plants. Deltapine 675 has a tawny pubescence with up to one (1) plant with gray pubescence in 2000 plants. Deltapine 675 has a brown hilum with up to 1.9% of the plants exhibiting a black hilum.

EXHIBIT E

DELTA AND PINE LAND COMPANY'S APPLICATION FOR DELTAPINE 675Statement of Basis of Applicant's Ownership

Delta and Pine Land Company owns the variety Deltapine 675 as this variety was developed by Delta and Pine Land Company. The cross was made by Delta and Pine Land Company personnel and subsequent selection and testing which led to the decision to release Deltapine 675 were conducted by personnel of Delta and Pine Land Company.

